

# इंटरनेट

# मानक

## Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

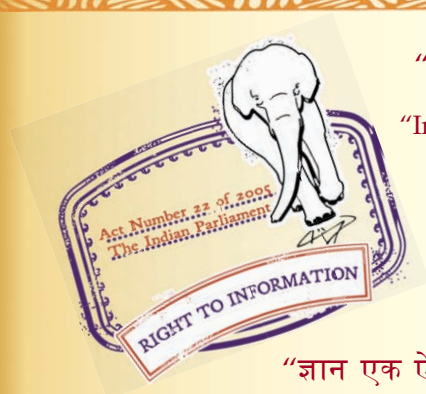
“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 4731 (2009): Guide for Preparation of Manuscript of an Article in a Learned Periodical [MSD 5: Documentation and Information]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”



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**IS : 4731 - 1968**

**( Reaffirmed 2003 )**

***Indian Standard***

**GUIDE FOR PREPARATION OF MANUSCRIPT  
OF AN ARTICLE IN A LEARNED PERIODICAL**

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**BUREAU OF INDIAN STANDARDS  
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG  
NEW DELHI 110002**

**Gr 4**

***October 1968***

## *Indian Standard*

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## *Indian Standard*

# GUIDE FOR PREPARATION OF MANUSCRIPT OF AN ARTICLE IN A LEARNED PERIODICAL

### 0. FOREWORD

**0.1** This Indian Standard was adopted by the Indian Standards Institution on 20 August 1968, after the draft finalized by the Documentation Sectional Committee had been approved by the Executive Committee.

**0.2** An article is one among the important media for the communication of information. An otherwise good article may be delayed in reaching or may even fail to reach its potential readers for want of helpful presentation of ideas in it.

**0.3** A helpful arrangement of the ideas is a means for better dissemination of the information contained in an article. This standard is a guide for the preparation of the article in such a way as to facilitate easy comprehension and assimilation of the contents of the article.

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### 1. SCOPE

**1.1** This standard lays down general instructions for the guidance of an author for the preparation of the text of an article communicating the results of research to a learned periodical.

### 2. TERMINOLOGY

**2.0** For the purpose of this standard, the following definition shall apply.

**2.1 Learned Periodical** — A periodical containing research communications.

### 3. GENERAL CHARACTERISTICS OF THE CONTENT OF AN ARTICLE

**3.1** An article may present new facts, ideas, concepts, theories, techniques and data.

**3.2** Alternatively, or in addition, an article may give a new interpretation of known facts, concepts, theories, ideas and data.

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**3.3** An article may present the subject in a new perspective and establish correlations between subjects or topics.

**3.4** Alternatively, or in addition, an article may give a historical treatment of the subject.

**3.5** An article may pertain to the testing or evaluation of any existing theory, concept, or technique.

## **4. PRESENTATION**

**4.1 Sequence of Presentation** — A logical sequence should be followed for the arrangement of ideas, facts, observations, data, etc, among the various sections and subsections of the article.

**4.2 Clarity of Presentation** — An idea should be expressed without ambiguity so that the reader is able to grasp it easily.

**4.3** Synonyms and homonyms should be avoided as far as possible.

### *Example:*

The use of the terms 'Periodical', 'Journal', 'Magazine' and 'Serial' in different parts of the text to indicate the 'Periodical'.

**4.4 Technical Terminology** — Standard technical terms should be used.

**4.4.1** Newly coined terms may be listed with their definitions at an appropriate place in the text.

## **5. STRUCTURE**

**5.1** An article comprises a number of distinct structural elements. Each element should be given a concise heading bringing out the content of the element concerned. The headings for the structural elements in different types of articles may differ, depending upon the nature of the study reported.

**5.1.1** An article reporting the results of an experimental or theoretical study may have all or some of the following elements:

- a) Title with a subtitle in the case of an article forming a part of a series;
- b) Name(s) and address(es) of author(s);
- c) Date of receipt of manuscript;
- d) Abstract;
- e) Introduction;
- f) Body of the article:
  - 1) Experimental procedure,
  - 2) Results, and
  - 3) Discussion;



- g) Conclusion;
- h) Summary;
- j) Definitions, notations and symbols;
- k) Acknowledgement;
- m) Appendices;
- n) Bibliographical reference;
- p) Tables; and
- q) Illustrations.

**5.1.2 Numbering System** — The use of the well-defined numbering system to designate the structural elements of a text to help the author in presenting the material with clarity and the reader to follow the text is being increasingly realized. For instance the structural elements may be numbered 1, 2, 3, etc, and subdivided as 1.1, 1.2, 2.1, 2.2, 3.1, 3.2, etc. Further subdivision may be made as 1.1.1, 1.1.2, etc. However, it is desirable to avoid subdivision in any one number designation exceeding three subdivisions, for example, 1.1.1.1.

**5.1.3** Each heading of a structural element should contain a noun. The use of any other part of speech, such as the adjective 'Experimental' by itself as a heading is undesirable.

**5.2 Title** — The title of the article should be brief, precise and informative, and should contain key words indicative of the scope of the study. This facilitates indexing, besides helping the reader to have an idea of the content of the article at a glance.

**5.2.1** If the title is long, a shorter 'Running title' may also be provided.

**5.2.2** If the article is a part of a series, a subtitle indicative of the work covered in the article shall be given. It is not enough to add Part II, Part III, etc, to the title.

**5.3 Authors' Names and Addresses** — In the case of an article with multiple authorship, any convenient order of giving the author's name may be chosen, but it is preferable to give the principal or senior author's name first.

**5.3.1** If the article is the result of collaborative work of authors working in different institutions, it is preferable to give their respective names and addresses separately.

*Example:*

*Incorrect* R. D. Nigam & C. L. Saxena  
Central Drug Research Institute, Lucknow.  
& Central Indian Medicinal Plants Organization,  
Lucknow.

## IS: 4731 - 1968

*Correct* R. D. Nigam  
Central Drug Research Institute, Lucknow.

C. L. Saxena  
Central Indian Medicinal Plants Organization,  
Lucknow.

**5.4 Abstract** — The abstract should be prepared in accordance with the provision of IS: 795-1956\*. It should not ordinarily exceed 3 percent of the length of the paper or 200 words. The abstract should be informative and should outline as briefly as possible the scope of the work, the principal findings and the definitive conclusions of the work. It should be prepared in such a form that abstracting periodicals may use it without modification.

**NOTE** — The items of information given in 5.2 to 5.4 are called preliminary statements. The preliminary statements may contain additional items of information, such as date of receipt of the article which establishes priority of publication and keywords taken from an assigned thesaurus. An 'Indian Standard recommendation for preliminary statements in an article in a learned periodical' is under preparation.

**5.5 Introduction** — The introduction should give briefly the lacunæ in what is known in the subject and the gaps the paper attempts to fill up. The background and purpose of the investigation should be indicated. A brief statement of relevant previous work with references may be given; descriptions of earlier findings or citations from earlier publications should be avoided. It is becoming a common practice to give in the concluding part of the Introduction, an idea of the important findings of the study reported. This facilitates the readers' understanding of the value of the work reported.

### 5.6 Body of the Article

**5.6.1** The body of the article may comprise a number of suitably titled structural elements.

**5.6.2** Where a well-known procedure or treatment is used, it should not be described in detail; modifications, if any, in the procedures followed may be indicated. It is enough to give relevant literature references. Only in such cases where a new procedure or treatment is followed it should be described in detail.

**5.6.3** The same results should not be presented in both tables and graphs.

**5.6.4** In mathematical papers, equations and mathematical expressions should be neatly and clearly written in hand.

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\*Canons for making abstracts.

**5.6.5** Equations should be numbered consecutively in the international form of Indian numerals.

**5.6.6** Even when some equations occur in the appendices, the numbering should be in continuation of those in the text.

**5.6.7** Greek letters in the manuscript should be spelt out in the margin.

**5.6.8** Superscripts and subscripts should be legibly and carefully placed in the manuscript.

**5.6.9** Foot-notes should be avoided as far as possible.

**5.6.10** References to tables, illustrations and literature in text at their first place of occurrence should be indicated in the margin.

**5.6.11** Tables, illustrations, charts, formulæ, etc, should be specifically referred to in the text by their numbers and not by such expressions as 'above' or 'below', 'preceding' or 'following'.

**5.6.12** In papers dealing with chemical compounds, their names and not formulæ should be used in the text. Structural formulæ of new or uncommon compounds only need be given.

## **5.7 Conclusion**

**5.7.1** Conclusions deduced from the study should be given in numbered paragraphs at the end of the article.

**5.7.2** Statements not supported by experimental data and generalizations should be avoided.

**5.8 Summary** — Summary should comprise a brief and factual account of the contents of the paper and the conclusions emerging from the study.

**5.9 Definitions, Notations and Symbols** — In articles wherein a substantial number of definitions, symbols and abbreviations including Greek letters are used, it is preferable to include a section immediately before the 'references' or 'bibliography' section, under which full explanations are provided for them.

## **5.10 Acknowledgement**

**5.10.1** The author(s) may acknowledge grants-in-aid, assistance in experimental work or in the preparation of the manuscript or supply of material, etc.

**5.10.2** Acknowledgement in the form of foot-notes to the title or to words in the text should be avoided.

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**5.11 Appendices** — Appendices should be numbered consecutively in the international form of Indian numerals.

**5.12 Bibliographical References**

**5.12.1** Wherever warranted, reference to published documents actually consulted should be given.

**5.12.2** All bibliographical citations shall be in accordance with IS : 2381-1963\*.

**5.12.3** In the bibliographical citations, terms like the following should not be used:

<i>ibid</i>	( <i>ibidem</i> = in the same work )
<i>idem</i>	( <i>idem</i> = of the same author )
<i>infra</i>	( <i>infra</i> = below )
<i>Loc cit</i>	( <i>Loco citato</i> = in the place cited )
<i>Op cit</i>	( <i>Opera citato</i> = work quoted )
<i>sup</i>	( <i>Supra</i> = above )

**5.13 Tables**

**5.13.1** Only essential data should be tabulated.

**5.13.2** Presentation of a large mass of essentially similar data should be avoided. It is always preferable to report mean values with some accepted measure of dispersion (standard deviation, standard error, range, etc) and indicate the number of individual observations.

**5.13.3** Layout of tables should be such that the significance of the results may be readily and quickly grasped by the readers. Remarkable clarity is achieved by interchanging columns and lines.

**5.13.4** Tables of numerical data, too extensive to permit publication, should be summarized for discussion and the originals deposited with the editor.

**5.13.5** Tables should be typed on separate sheets of paper without any text matter on the page.

**5.13.6** Each table should have a brief but self-explanatory title.

**5.13.7** Tables should be numbered consecutively in the international form of Indian numerals.

**5.13.8** Column headings should be as brief as possible.

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\*Recommendations for bibliographical reference.

**5.13.9** For units of measurement, standard abbreviations (7.1.2) should be used and these should be typed below the respective column headings.

**5.13.10** Structural formulæ as in articles dealing with organic chemistry should be included inside the tables only when they are necessary.

**5.13.11** Nil results should be indicated by 'nil' and distinguished from absence of data where a dash (—) may be used.

**5.13.12** Ditto should be indicated not by 'ditto' mark ("), but by 'do'.

**5.13.13** Wherever the information requiring a column in a table can be furnished by a short statement, the latter should be preferred.

#### **5.14 Illustrations**

**5.14.1** Infrared, ultraviolet, NMR (Nuclear Magnetic Resonance), spectral and DTA (Differential Thermal Analysis) curves, etc, should be included only if they pertain to new compounds and are essential to the discussion; otherwise only significant numerical data should be included in the text.

**5.14.2** Half-tone oscillograph photographs, chromatograms, etc, should be avoided and line drawings made from the photograph should be preferred.

**5.14.3** All illustrations, except those to be printed as plates should be numbered consecutively in the international form of Indian numerals. Illustrations to be printed as plates should have a separate sequence from text illustrations in Roman numerals, as Plate I, Plate II, etc.

**5.14.4** Self-explanatory captions for illustrations should be typed on a separate sheet of paper and attached at the end of the manuscript.

**5.14.5** In addition to the originals, a duplicate set of illustrations may be provided.

**5.14.6** Line drawings should be made with India ink on white smooth — surfaced drawing paper, cellophane sheet, tracing paper or tracing cloth, or graph paper ruled in pale blue or grey lines, except when for any specific reason the lines of the graph are also to appear in the prints.

**5.14.7** As a general rule, line drawings should be drawn to approximately one and a half times the size of the printed illustration. The size of letters, numbers, dots, lines, etc, should be sufficiently large to permit reduction to the page or the column size without loss of readability.

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**5.14.8** If the author has special reasons for reproducing illustrations in particular sizes according to arrangement, he should indicate those reasons for the editors' guidance.

**5.14.9** Legends for the curves in the graph, if brief, may be written alongside the curves. If lengthy, it should be given in the caption. In such cases, only such symbols should be used for the various curves as are normally available with the printing presses.

**5.14.10** Photographic prints intended for reproduction in black and white should be on glossy paper.

**5.14.11** The use of different coloured lines in line drawings should be avoided. For distinguishing the various lines, standard symbols (O,  $\Delta$ ,  $\square$ , etc) should be used.

**5.14.12** Shading and hatching are difficult to do by hand. They can be added mechanically by the engraver when the block is made. The area to be shaded or hatched should be indicated on the drawing in pencil and appropriate instructions given in the margin.

**5.14.13** Linear magnification or reduction of photomicrographs should be mentioned in the caption. Alternatively, a scale may be included in the illustration itself.

**5.14.14** Illustrations should not be pasted to the pages of the text. They should be attached in a suitable manner to the numbered sheets and despatched together with the typescript.

**5.14.15** The originals of figures, drawings, graphs, photographs, etc, intended for reproduction should be separately arranged and packed flat between cardboard without being folded or fastened with clip or pin, so as not to rub, erase or otherwise mutilate or damage the work. If the original is too big for the above mode of packing, it should be rolled and packed in a suitable container.

**5.14.16** It is most important that no mistake should be made in any part of an illustration. While errors in the text may be corrected at the proof stage without much labour or expense, corrections to an illustration may involve the preparation of a new block. Illustrations should, therefore, be re-checked.

## **6. NUMERALS AND UNITS**

**6.1** The general rule is to use numerals if they occur in the middle of a sentence — they are not spelt out.

**6.1.1** The numerals one to ten may preferably be spelt out, except when they are followed by a symbol, a term, or an abbreviation,

denoting the unit or measure.

*Examples:*

9°C, 5 acres and 1 s

**6.2** A number should be spelt out where the use of the numeral may be confusing and ambiguous.

*Example:* Twelve 220 V dc fans

**6.3** As far as possible, starting a sentence with a numeral should be avoided; if unavoidable, the numeral should be spelt out.

*Example:*

*Incorrect* 12 articles were published during the year.

*Correct* The number of articles published during the year was 12. *OR* Twelve articles were published during the year.

**6.4** Where it is necessary to indicate fps or local units, the equivalent metric figures may be given and the corresponding fps or local units be given in brackets.

**6.4.1** Percentage may require definition; for example, in describing solutions 'percent by weight' and 'percent by volume' have to be distinguished.

**6.5** Where a numeral is spelt out, the unit used shall also be spelt out.

*Example:*

*Incorrect* Ten g of the residue.....

*Correct* Ten grams of the residue.....

**6.6** Decimals should be preferred to vulgar fractions. With metric units vulgar fractions shall never be used.

**6.7** For values less than one, a zero shall be inserted before the decimal point.

*Example:*

*Incorrect* .25 ml

*Correct* 0.25 ml

**6.8** Numerical value involving many zeroes may be abbreviated; thus  $2.75 \times 10^6$  instead of 2 750 000 and  $4.5 \times 10^{-6}$  instead of 0.000 004 5.

**6.9** The number of significant figures given in a published result should indicate the degree of accuracy of the result. For example, the

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measurement obtained as 8 shall be shown as:

- a) 8, if the accuracy intended is only to the unit place;
- b) 8.0, if the accuracy intended is to one decimal place;
- c) 8.00, if the accuracy intended is to two decimal places; and
- d) so on.

**NOTE** — The inter-conversion of values shall conform to IS : 787-1956\*.

**6.9.1 Numerals of More Than Three Digits** — A numeral of more than three digits should be given in groups of three with a space between every two consecutive groups. The grouping shall be made from the digit in the unit place towards left. When there is a decimal point, grouping shall be made to the right from the decimal point.

*Examples:*

*Not recommended:*

- 1) 5, 716, 500
- 2) 3, 17,021
- 3) 762 525 4.37432  
125673

*Recommended:*

- 1) 5 716 500
- 2) 317 021
- 3) 7 625 254.374 32  
0.125 673

**6.9.2** In certain cases, such as a year number, a four-digit numeral may be written without grouping and spacing.

*Example:*

14 May 1957

## 7. ABBREVIATION AND SYMBOL

### 7.1 Abbreviation

**7.1.1** In the interest of economy in expression, oft-repeated words or groups of words — those peculiar to the subject of the text — may be abbreviated in the text.

**7.1.2 Abbreviations for the Units of Measurement** — The abbreviations for units of measurement shall be in accordance with the relevant Indian Standards, namely, IS : 1890 (Part I)-1961†, IS : 1890 (Part II)-1961‡, IS : 1890 (Part III)-1961§, IS : 1890 (Part IV)-1961|| and IS : 1890 (Part XI)-1961¶.

\*Guide for inter-conversion of values from one system of units to another.

†Recommendations on fundamental quantities of units of the MKSA system and quantities and units of space and time.

‡Recommendations on quantities and units of periodic and related phenomena.

§Recommendations on quantities and units of mechanics.

||Recommendations on quantities and units of heat.

¶Mathematical signs and symbols for use in the physical sciences and technology.



**7.1.3** In other cases, the abbreviations improvised by the author may be made on the analogy of the standard abbreviations. In particular, it should be easily intelligible in the context in which it occurs.

**7.1.4** Terms denoting units of measurement may be abbreviated in the text when preceded by the amounts indicated in numerals.

*Examples:*

12 in  
120 g  
40 kg

**7.1.5** The same abbreviation should be used for both singular and plural forms.

*Examples:*

<i>Correct</i>	10 cm
<i>Incorrect</i>	10 cms
<i>Correct</i>	20 g
<i>Incorrect</i>	20 gs

**7.1.6** Abbreviations should not be used where the meaning is likely to be obscured. In case of doubt, words should be spelt out in full.

*Example:*

The abbreviation for litre (l) when typeset clashes with the numeral '1'. It is, therefore, preferable to write this unit always in full in the text.

**7.1.7** In general, no fullstop should be put after an abbreviation in order to indicate that it is an abbreviation, except when it results in ambiguity.

**7.1.8** Letters in an initonym, such as UNESCO, should neither be spaced out nor punctuated.

**7.1.9** All the letters in an initonym should be in capitals.

**7.2 Graphical Symbols and Letter Symbols**— Graphical symbols and letter symbols may be defined as follows:

- a) *Graphical Symbols*— Graphical symbols are pictorial symbols used to represent equipment, quantities, circuit connections arrangements, etc, supplemented, where necessary, by letters and numerals.
- b) *Letter Symbols*— Letter symbols are letters used to represent physical quantities and chemical elements in equations and formulæ.

**7.2.1** If two or more systems of symbols exist, the author should state clearly the system followed by him.

**7.2.2** In arranging the symbols, IS : 382-1952\* should be followed.

**7.2.3** All the special improvised terminology used in the text should be listed with their respective meanings.

\*Practice for alphabetical arrangement.

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Gangotri Complex, 5th Floor, Bhadbhade Road, T.T. Nagar, BHOPAL 462003	55 40 21
Plot No. 82/83, Lewis Road, BHUBANESHWAR 751002	5 36 27
Kalai Kathir Building, 6/48-A Avanasi Road, COIMBATORE 641037	2 67 05
Quality Marking Centre, N.H. IV, N.I.T., FARIDABAD 121001	—
Savitri Complex, 116 G. T. Road, GHAZIABAD 201001	8-71 19 96
53/5 Ward No. 29, R.G. Barua Road, 5th By-lane, GUWAHATI 781003	3 31 77
5-8-56C L. N. Gupta Marg. ( Nampally Station Road.) HYDERABAD 500001	23 10 83
R14 Yudhister Marg, C Scheme, JAIPUR 302005	6 34 71
117/418 B Sarvodaya Nagar, KANPUR 208005	21 68 76
Plot No. A-9, House No. 561/63, Sindhu Nagar, Kanpur Road, LUCKNOW 226005	5 55 07
Patliputra Industrial Estate, PATNA 800013	6 23 05
District Industries Centre Complex, Bagh-e-Alli Maidan, SRINAGAR 190011	—
T. C. No. 14/1421, University P. O., Palayam, THIRUVANANTHAPURAM 695034	6 21 04
<b>Inspection Offices (With Sale Point) :</b>	
Pushpanjali: First Floor, 205-A West High Court Road, Shankar Nagar Square, NAGPUR 440010	52 51 71
Institution of Engineers (India) Building, 1332 Shivaji Nagar, PUNE 411005	5 24 35

*Sales Office Calcutta is at 5 Chowringhee Approach, P. O. Princep Street, CALCUTTA	27 68 00
† Sales Office is at Novelty Chambers, Grant Road, BOMBAY	89 65 28
‡ Sales Office is at Unity Building, Narasimharaja Square, BANGALORE	22 39 71

Reprography Unit, BIS, New Delhi, India